DOCUMENT RESUME

ED 276 624 SE 047 625

TITLE	Michigan's Infrastructure: Priorities for the Future. Capital Investment Needs 1985-1995.
INSTITUTION	Michigan Infrastructure Coalition, Lansing.
PUB DATE	May 86
NOTE	56p.; Report prepared with the assistance of the Governor's Task Force on Public Investment Coordination.
PUB TYPE	Legal/Legislative/Regulatory Materials (090) -- Reports - Evaluative/Feasibility (142)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	Capital Outlay (for Fixed Assets); Elementary Secondary Education; *Environmental Standards; Futures (of Society); *Government School Relationship; Higher Education; *Investment; Living Standards; Long Range Planning; Physical Environment; Pollution; *Public Education; *State Government; Transportation; Trend Analysis
IDENTIFIERS	*Capital Investment Needs; Infrastructure; *Michigan

ABSTRACT

The Michigan Infrastructure Coalition was formed to review needs and make judgments concerning priorities for future infrastructure investments in Michigan. This report describes the coalition's findings and is intended to serve as the guidelines for state elected officials. Contents include: (1) an introduction (specifying priority areas); (2) summary of investment priorities (portraying needs through a graph and chart); (3) environmental infrastructure (addressing the areas of environmental changes, solid waste disposal, waste water treatment, and municipal water systems); (4) educational infrastructure categories (outlining needs and priorities in higher education and K-12 public education); (5) transportation infrastructure categories (covering concerns related to passenger and freight transportation and highways, roads and streets); and (6) governmental infrastructure (examining state facilities). A list is provided of coalition members as well as participants in the public investment coordination task force. (ML)

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MICHIGAN'S INFRASTRUCTURE:

Priorities for the Future

Capital Investment Needs 1985-1995

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A Report of the Michigan Infrastructure Coalition

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Michigan's Infrastructure: Priorities for the Future

A Report of the
Michigan Infrastructure Coalition

May, 1986

Honorable James J. Blanchard
Governor of Michigan
State Capitol
Lansing, Michigan

Dear Governor Blanchard:

When you first assumed office nearly four years ago, Michigan faced a crisis in the condition of its infrastructure. The great physical structures that were the legacy of past builders of our state, and which serve as the underpinnings of all we do, were in dangerous disrepair. Difficult economic times and drastically reduced budgets at all levels of government had brought us to a point of crisis. The lack of a comprehensive plan for the future limited our hopes for recovery.

The crisis of our infrastructure was one of the first challenges of your new administration. It remains central to Michigan's plans for the 1980s and beyond; but unlike four years ago, it might fairly be said that we have passed the point of crisis.

The Governor's Program to Rebuild Michigan, now in its third year, has reversed the trend toward deterioration. In the past three years, Michigan has repaired more roads than have deteriorated into substandard condition, after years of such decline. The crisis of our criminal justice system has begun to be met through a new construction program unparalleled in state history. And the danger to our environment posed by hazardous waste is being addressed through accelerated clean up. Across the gamut of infrastructure, the job of rebuilding Michigan has been well begun.

Michigan's balanced budget and improved credit rating have allowed the financing of long overdue infrastructure projects. But money is only part of the solution. You have declared that Michigan must "spend smarter" and we heartily agree.

As part of that effort, we today present to you the results of a major study undertaken by the Michigan Infrastructure Coalition with the assistance of your own Public Investment Coordination Task Force and state government staff. It examines Michigan's infrastructure needs in the coming decade.

In your charge to the Coalition, you asked that we examine the state of our infrastructure as a whole, as one interlocking

system designed to serve all of our citizens in every realm of work and leisure. I believe we have done so. In the pages that follow is a comprehensive analysis of Michigan's infrastructure needs, designed to allow a fresh look at our future.

This report is very much a work in progress. Rather than an engineer's blueprint, it is an artist's canvas, an ideal that we might strive to achieve. We look forward to working with you in refining this analysis, adapting technology to find efficient solutions, and seeking new and creative methods of finance that will help us make our goals reality.

As the program to rebuild Michigan is formulated in the years to come, we hope that this document will serve to guide your efforts. The members of the Michigan Infrastructure Coalition reaffirm their continuing commitment to the effort to maintain and enhance our infrastructure systems, as partners with state government in this critical endeavor.

Sincerely,

Thomas R. Ricketts
Chairman

enclosure

STATE OF MICHIGAN
OFFICE OF THE GOVERNOR
LANSING

JAMES J. BLANCHARD
GOVERNOR

Mr. Thomas R. Ricketts
Chairman & President
Standard Federal Savings & Loan
2401 West Big Beaver
Troy, Michigan 48084

Dear Tom:

I gratefully acknowledge the efforts of the Michigan Infrastructure Coalition, and your particular efforts as chairman, that have resulted in this fine study, Michigan's Infrastructure: Priorities for the Future.

When I asked you to undertake this study, I hoped you would be able to bring a breadth of expertise to the task that would allow a comprehensive vision of what Michigan could achieve in the future. I noted that we could not plan to do all we might want to do, but that if we did not plan, we could do little to serve our state. I asked that you envision a state that could claim an infrastructure system second to none, and to plan the initial steps on the road to that goal. You have done that job exceedingly well.

The work of the Michigan Infrastructure Coalition, in concert with Robert L. Mitchell, Coordinator of Public Investment for the State of Michigan, and with the Public Investment Coordination Task Force and state government staff, has resulted in a unique document and resource.

Excellence in infrastructure is not the work of a day, or even of a decade. Our infrastructure represents a considerable public investment in systems designed to serve not only the citizens of Michigan, but our children and their children as well. Thus planning for infrastructure improvements is necessarily a task that requires great vision and long study. Through that study, you have developed that vision.

Your work, in many ways, exemplifies our intention to "spend smarter." The needs you have identified, and broad priorities you have established, will improve government decision-making, and ease the task of meeting great goals with limited resources.

I thank you and all the members of the Coalition for your fine work. I will continue to call on you as we seek to meet the challenges of Michigan's future.

Sincerely,

James J. Blanchard
Governor

FOREWARD

Michigan's Infrastructure: From Crisis to Opportunity

A PUBLIC INVESTMENT

Michigan's infrastructure is its lifeline, the physical structures that ensure public health and safety, allow commerce and economic growth, and enhance the quality of all our lives. Roads and bridges, airports and harbors, public transportation, and prisons are part of the infrastructure. Water, sewage, and waste disposal facilities, schools and colleges, parks, and other publicly owned land and buildings are components as well.

In the 1980s, much is being done to repair and rebuild our infrastructure. But the legacy of the past- neglect and disinvestment, and misplaced priorities- means continuing deterioration. Bridges rust, roads fall into disrepair, public buildings remain energy-inefficient, prisons overcrowded. The evidence of past neglect is all around us, in plain sight. Other evidence, such as leaking water lines and underground water contamination, is less visible, but equally threatening.

The deterioration of our infrastructure came about for a variety of reasons. The severe economic swings Michigan has endured in recent decades have limited investment resources available to state and local government. Maintenance and renovation have been postponed as a result, and this disinvestment has added to the cost of repairs. Heightened environmental concern, a greater emphasis on safety, new federal standards, and increased demand for services has further compounded the crisis of our infrastructure. Uncertainty regarding the continuation of traditional construction grant programs- particularly at the federal level- raises doubt about future funding for infrastructure construction as well.

The problem is not unique to Michigan. Estimates of the cost of repairing America's infrastructure range from $400 billion to $3 trillion. According to the National Infrastructure Study prepared for the Joint Economic Committee of the United States Congress, "In state after state, the immediate and projected infrastructure needs are considerable, and the gap between capital expenditure and capital needs is growing." In the face of trillion-dollar federal deficits and the budget cutting requirements of the Gramm-Rudman-Hollings amendment, the search for solutions to Michigan's infrastructure problems has become more difficult. As Michigan regains its position as a world leader in the manufacturing market place, continues to progress economically, and strives to maintain its exceptional quality of life, the challenge of infrastructure restoration and development will continue to be essential to our success.

A STEP-BY-STEP PROCESS

Governor Blanchard made a commitment to rebuild our state when he assumed office in 1983. He appointed Robert L. Mitchell as Coordinator of Public Investment, to undertake an unprecedented assignment--to oversee state government's share of investment in our infrastructure. And he called on the private sector as well, as the rebuilding program was developed. The Michigan Infrastructure Coalition, comprised of representatives from 70 statewide business, civic, education, and labor organizations, was formed in 1983 at his request. Thomas R. Ricketts, Chairman and Chief Executive Officer of Standard Federal Savings and Loan, accepted the Governor's invitation to serve as chairman of the Coalition.

To discover the nature and extent of Michigan's infrastructure problems, the Coalition and Governor Blanchard began by sponsoring seven public hearings on infrastructure in Michigan cities from Detroit to Marquette. People were eager to participate; over 1,300 pages of testimony were generated. The testimony is summarized in the publication From Crisis to Opportunity: Rebuilding Michigan's Infrastructure.

Testimony at these hearings gave direction to the search for long term solutions to Michigan's infrastructure problems. As a beginning, Governor Blanchard proposed, and the legislature voted to establish the Michigan Municipal Bond Authority. This landmark program will finance local infrastructure redevelopment through the use of the state's improved credit rating and ability to borrow money. Governor Blanchard's Public Investment Coordination Task Force joining with the Michigan Infrastructure Coalition developed as well a step-by-step program to rebuild Michigan's infrastructure. It is a program recognized nationally for its thoroughness and innovation. Michigan chose a careful, thoughtful approach. It has already produced concrete results, and ultimately offers even greater long-term rewards.

The first step in the process was to determine precisely what infrastructure investments were being made in Michigan each year. To accomplish this, the Public Investment Coordination Task Force, which includes representatives of 15 different state agencies directly involved with infrastructure investment, developed a computerized infrastructure inventory system. For the very first time, government was able to report precisely about both federal and state capital investment projects on a current basis. Updated and summarized annually, it is used by Governor Blanchard as the basis for monitoring current infrastructure investment and planning future projects. Each year The Governor's Program to Rebuild Michigan is published for distribution throughout the state, allowing both government and

the private sector to plan more efficiently than ever before.

The second step in the process is long-range determination of future needs. In 1985, the Task Force conducted a ten-year projected needs survey for eight categories of infrastructure, including transportation, waste water treatment, municipal water systems, environmental cleanup, solid waste disposal, K-12 and higher education, and state facilities. The purpose of this study was to objectively estimate the cost to repair, improve, and expand our infrastructure systems over the next decade, so as to provide those services which will continue to support Michigan's economic growth and maintain its quality of life for decades to come. The Task Force found that Michigan faces a sizable task--the estimated cost to eliminate all Michigan's current and ten-year projected infrastructure needs is more than $34 billion. Environmental and transportation needs dominate this planning list, amounting to $13 billion and $16 billion, respectively, over the next ten years.

The dollar figures generated by the ten-year needs study are overwhelming when contrasted to projected ten-year revenues--it is immediately apparent that we will not be able to fund all projected infrastructure needs. The prioritization of these needs, then, is a prerequisite to the third step in the rebuilding process, the development of a long range capital budget by the legislature. Such a budget could assure that limited available funds be spent on highest priority needs, and would create efficiencies through careful planning.

Thus, the Michigan Infrastructure Coalition, at the Governor's request, agreed to review needs and make judgments concerning priorities for future infrastructure investment. Its findings are described in this report. These judgments and recommendations can effectively serve as guidelines for Michigan's elected officials. They form the basis of a comprehensive, logical capital investment process, free from transient public pressures and a management-by-crisis atmosphere that too often has colored infrastructure investment decisions.

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INTRODUCTION

Setting Priorities

During 1985, a ten-year projected needs study was conducted by the Public Investment Coordination Task Force. The Task Force sought to determine the investment needed to repair, improve, and expand eight vital infrastructure systems over the next decade. Contrasting these needs figures to past funding levels, however, it is immediately apparent that all our infrastructure needs cannot be funded. For that reason, the Michigan Infrastructure Coalition agreed to review estimated needs and make judgments regarding priorities for investment. To the work of government represented by the Public Investment Coordination Task Force, would be added the private sector expertise of members of the Michigan Infrastructure Coalition.

Needs figures employed in this analysis were taken from the first phase of the Michigan Infrastructure Needs Assessment 1985-1995, with the addition of figures for K-12 public education which were generated by a more recent survey. Some needs estimates were adjusted as more refined data became available.

To guide the process, three levels of priority were established--critical, essential, and optimal. The following definitions, similar to common and dictionary usage, were employed for each priority:

Critical: **Forming, or of the nature of, a crisis; crucial. Fraught with danger or risk; perilous.**

Essential: **Basic, or indispensable. A fundamental, necessary or indispensable part.**

Optimal: **The amount or degree of something that is most favorable to some end. Greatest degree attained or attainable under implied or specified conditions.**

The Coalition first ranked needs without discussing available funding. In order to develop a vision of what Michigan could be like by 1995, and in contrast to the traditional capital outlay process, the members of the Coalition chose not to allow their analysis of Michigan's future to be blurred by past practice or political considerations. Instead, they sought to plan for the future comprehensively, with specific goals in mind. By setting goals and planning strategies to achieve them, investment decisions could be made more wisely, the members reasoned, and much more could be accomplished.

The Coalition membership reviewed infrastructure needs in each

category during the fall of 1985. After extensive analysis and discussion, they reached consensus on priorities for investment. Aggregate dollar figures for each category were then classified in accordance with the Coalition's rankings by members of the Public Investment Coordination Task Force and department staff. Costs were determined for each initial priority judgment. The preliminary total for critical investment needs was found to be just over $18 billion over the coming ten years.

The Public Investment Coordination Task Force, assisted by department staff, then developed a ten year revenue projection, based on existing legislation and funding levels, of just under $10 billion. Although uncertainty surrounds that projection- due to potential funding cuts mandated by the Gramm-Rudman-Hollings amendment, changes in the federal tax law, in waste water construction grants and in the federal Superfund used to treat environmental contamination sites- the Coalition believes this estimate sufficiently precise to make reliable judgments.

Using these best available projections, members of the Coalition compared their priorities with anticipated revenues. Finding a serious shortfall between critical needs and available funding, they worked to further refine their priority decisions, and were able to reach agreement on critical infrastructure needs amounting to just under $13 billion. At this level of investment, Michigan could maintain its investment in the physical structures that comprise our infrastructure, and many of the serious problems Michigan faces today might be resolved.

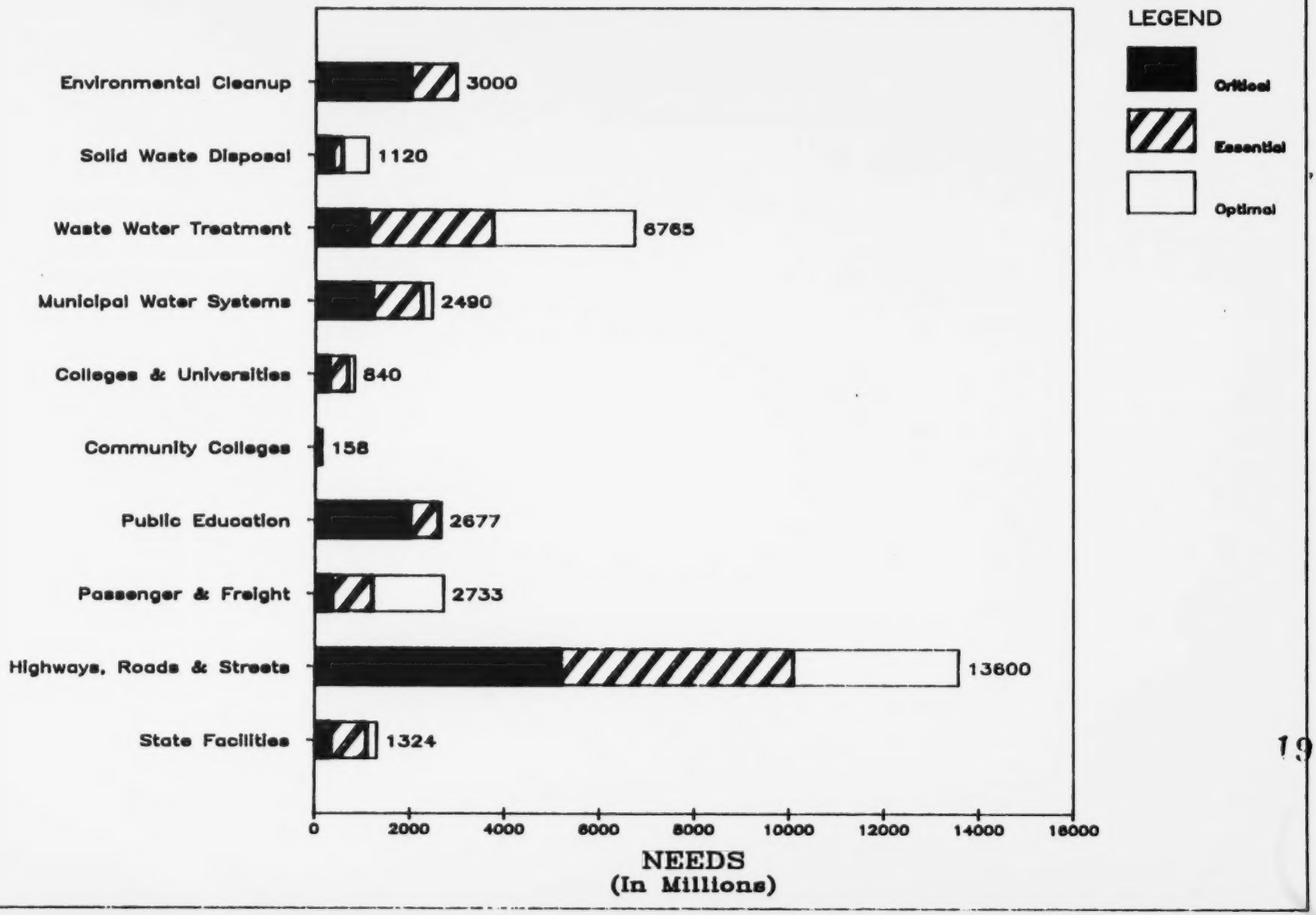
The pages following detail the Michigan Infrastructure Coalition's priority judgments regarding capital investment needs over the next decade in eight categories of infrastructure.

Summary

SUMMARY OF INVESTMENT PRIORITIES
(In Millions of Dollars)

Category	Estimated Investment Needs	Critical Needs	Essential Needs	Optimal Needs
Environmental Cleanup	3,000	2,000	1,000	0
Solid Waste Disposal	1,120	356	211	553
Waste Water Treatment	6,765	1,100	2,665	3,000
Municipal Water Supply	2,490	1,200	1,050	240
Colleges & Universities (4-year)	840	289	399	152
Community Colleges	158	45	41	72
Public Education (K-12)	2,677	2,000	612	65
Passenger & Freight Transportation	2,733	350	859	1,524
Highways	13,600	5,200	4,900	3,500
State Facilities	1,324	336	759	229
Total	34,707	12,876	12,496	9,335

SUMMARY OF 10 YEAR INVESTMENT PRIORITIES



Environment

ENVIRONMENTAL INFRASTRUCTURE CATEGORIES
(in Millions of Dollars)

Category	Estimated Needs 1985-95	Critical Needs	Essential Needs	Optimal Needs
Environmental Cleanup	$ 3,000	$2,000	$1,000	$ 0
Solid Waste Disposal	$ 1,120	$ 356	$ 211	$ 553
Waste Water Treatment	$ 6,765	$1,100	$2,665	$3,000
Municipal Water Supply	$ 2,490	$1,200	$1,050	$ 240
Total Environmental Needs	$13,375	$4,656	$4,926	$3,793

ENVIRONMENTAL CLEANUP

Michigan has moved aggressively to correct environmental contamination that causes the loss of useful water supplies. Such contamination reduces property values, and presents a very real threat to the public health. Michigan's agricultural and tourist industries, the second and third largest in the state, which depend on the quality of our unique land and water resources are also threatened, and must be protected as well.

Contamination incidents vary widely, from leaking service station gas tanks that may contaminate a few residential wells, to more serious sites, like the Berlin and Farro hazardous waste incinerator at Swartz Creek. Contamination by toxic chemicals, used motor oil, drug and dye by-products, and other wastes may take years and millions of dollars to address.

Program Responsibility

Most environmental cleanups are undertaken on an emergency basis at critical sites. Based on historic trends, private parties responsible for contamination can be expected to pay approximately one-third of the total cleanup cost. In addition, the federal Superfund, administered by the Environmental Protection Agency (EPA), serves as the chief source of government funding. In the past, Michigan has been high on the list of states receiving Superfund monies, second only to New Jersey in the number of sites funded. In addition, to speed this effort further, the first major contribution of state government money was made in the 1985 fiscal year, when $24 million was appropriated from the state General Fund.

Private funds may be available for construction of a needed new hazardous waste disposal facility. While private parties may also be expected to fund some portion of future reclamation efforts, the state and federal government must assume responsibility for the majority of cleanup costs. Total revenues for this work of $1.265 billion are anticipated over the next ten years, from all sources.

Estimated Ten-Year Investment Needs: $3 billion

A 1985 inventory of environmental contamination sites in Michigan by the Michigan Department of Natural Resources (DNR) Groundwater Quality Division serves as the basis of this analysis.

Of the 1,100 known contamination sites in Michigan, DNR estimates that some 426 sites currently require cleanup. Based on expenditures in previous work, each site will cost an average of $4.5 million to treat. The estimate of future environmental cleanup needs is based on a straight line projection of current trends in site discovery and cleanup cost, as the relatively short history

of this program prevents a more precise forecast.

This estimate represents a limited program. Expenditures would be made primarily for clean up and basic remedial measures, such as replacement of water supplies at severely contaminated sites. Few contaminated areas could be restored to their original condition at this funding level. Also included is construction of a new disposal facility to replace Michigan's only existing hazardous waste landfill, which is nearing capacity.

In addition, the DNR estimates that there are currently 7,000 abandoned gas stations in Michigan, each a potential problem due to possible leakage from underground tanks. The cost of inspecting these facilities is difficult to estimate and has not been included in these projections.

Environmental Cleanup: Investment Priorities

Critical Investment Needs: $2.0 billion

Over 400 existing contamination sites in the state would be treated, protecting Michigan's valuable water resources, farm land, and green space from further contamination. A new hazardous waste disposal facility would also be constructed ($150 million).

Essential Investment Needs: $1.0 billion

Essential needs include response to immediate health concerns at new contamination sites as they are identified ($400 million), and cleanup of more than 200 additional sites throughout Michigan.

SOLID WASTE DISPOSAL

Michigan generates approximately 26,000 tons of solid waste a day- roughly one ton of garbage per person per year- most of which is deposited in sanitary landfills. These landfills have contributed to groundwater contamination in many areas of the state, and the capacity of existing landfills will soon be exhausted. The potential environmental threat created by solid waste landfilling, and the expected future scarcity of landfill space, pose a serious problem for the entire state.

Several examples demonstrate the seriousness of the solid waste disposal problem in Michigan.

- The only operating waste disposal site in Macomb County is scheduled to close in March of 1987. Proposed construction of a new landfill is adamantly opposed by some local residents, and in February a local judge ruled against construction of the new landfill. Even now, Macomb County is trucking 1,500 to 1,800 tons of solid waste a day to Oakland County landfills for disposal.

- In the Northern Lower Peninsula, there are four licensed waste disposal sites; some communities must haul their waste 65 miles one way. In the tri-county area of Grand Traverse, Leelanau, and Benzie counties, there is one remaining privately owned landfill. Because of limited disposal options in the area, solid waste disposal costs have risen over 200 percent in the last three years.

- Due to the scarcity of licensed landfills in the Upper Peninsula, the City of Marquette must haul its waste to landfills at the far eastern end of the peninsula, a 320-mile round trip.

Program Responsibility

Processing of solid waste in Michigan has traditionally been funded by local government or the private sector through user charges. Federal funding was provided for several years (1976 to 1981) under the Resource Conservation and Recovery Act of 1976. Since 1982 there has been no federal funding for solid waste management.

State funds, when available, have been used for enforcement, technical assistance, education, and cleanup. Last year, the state allocated $5.5 million to promote recycling and match local and private funds for pilot projects in resource recovery. This year, outstate equity funds of $4 million were supplemented by the $10 million "Clean Michigan Fund." First-year fund projects will include closing unsafe landfills and promoting increased recycling. Total anticipated revenues, based on recent funding

by state, local, and private sources, should amount to approximately $224 million over the next ten years.

Estimated Ten Year Investment Needs: $1.120 billion

Based on its analysis of Michigan's solid waste disposal problem, the Department of Natural Resources in 1984 proposed a strategy of conversion from traditional solid waste landfilling to recycling and resource recovery. The needs figures included here are based on a 1985 update of that proposal. By establishing recycling centers, transfer stations, and composting yards, and by constructing approximately 40 waste-to-energy incinerators, it is estimated that solid waste landfilling in Michigan could be reduced by about 70 percent.

Solid Waste Disposal: Investment Priorities

Critical Investment Needs: $ 356 million

Transfer stations would be constructed, and all currently unsafe or unlicensed landfills would be closed ($81 million). Some ten waste-to-energy facilities would be constructed at sites where the need is greatest ($256 million). Recycling centers and composting yards ($4 million), and environmentally sound, licensed landfills ($15 million) would be constructed for non-incinerable waste and residue from waste incineration.

Essential Investment Needs: $ 211 million

Further reduction in the amount of solid waste buried in landfills would be achieved through the construction of eight additional resource recovery incinerators ($202 million). More recycling centers and composting yards ($4 million) and additional sanitary landfills for residue ($5 million) would be established.

Optimal Investment Needs: $ 553 million

A 70 percent reduction in solid waste landfilling might be achieved through complete implementation of the proposed resource recovery program--construction of approximately 22 additional waste-to-energy facilities ($542 million), and additional recycling centers and composting yards ($11 million).

WASTE WATER TREATMENT

Despite recent efforts that place Michigan among the leaders in water quality efforts among the fifty states, waste water treatment facilities in many Michigan communities remain inadequate, and some pose a threat to public health. Some 59 municipalities face enforcement orders to comply with state or federal law. Other communities are prohibited from new construction within their jurisdiction until their sewer systems are improved and many have had difficulty attracting or retaining industrial development because of inadequate waste water treatment facilities. The relevant statute- the federal Clean Water Act- establishes a deadline for compliance with waste water treatment guidelines of July 1, 1988.

Michigan's most serious waste water treatment problems are found in the Rouge River, a 125-mile waterway in Southeast Michigan. The river flows through 36 communities in three counties, and has the greatest potential for public use of any river basin in Michigan--50 miles of stream banks are used as community parks. But with some 180 outlets for sewage and industrial waste overflow emptying into it, direct discharges from industry, and run-off from streets and fields, monumental pollution problems have been created in and around the river. Complaints of nuisance odors, floating materials, and dead fish in the basin are common. In one area of the Lower Rouge, the buildup of sludge on the river bottom has become so intense that in the last few years large chunks of sludge, called "mats," have broken loose from the river bottom and floated to the surface. Because the river flows into Lake Erie, its pollution affects residents of Ohio, Pennsylvania, New York, and Canada, as well as those of Michigan. Similar, though less severe problems face residents in other areas of Michigan.

Program Responsibility

Operation and routine maintenance costs of waste water treatment are paid by users. Construction of new or expanded systems has, since the first federal participation in 1956, utilized increasing amounts of federal funding matched by state and local money. This has allowed construction of large-scale projects that would not otherwise have been possible. Local shares have been generated with revenue or general obligation bonds, backed by special assessments to users or by general millage increases. In addition, communities of less than 10,000 persons qualify for Farmers Home Administration loans and grants for this purpose, though funding of this program has been reduced by 50 percent since 1981.

Since the passage of the Federal Water Pollution Control Act in 1972, federal programs, including the federal Construction Grants Program, have brought approximately $2.4 billion to Michigan for construction of sewers and water treatment plants. An alternative to this program, now under consideration in Congress, proposes federal start-up funds for a state revolving loan fund. State funds would be required, and municipalities would be able to borrow from the fund rather than receiving federal grants. Should this program be implemented, approximately $1 billion in revenues would be available for use in waste water treatment over the next ten years, including federal start-up funds, state revenues, and matching local funds.

Estimated Ten Year Investment Needs: $6.765 billion

To meet guidelines established by the EPA, each state is required to assess its municipal waste water treatment needs on a biennial basis. Estimated needs are based on the 1984 assessment conducted by the DNR.

Included are $1.1 billion for projects with completed facility plans, and an estimated $765 million in projected improvements required to comply with state and federal law. In addition, $1.9 billion in improvements are projected for economic development purposes and to meet population growth, and an estimated $3 billion is needed for the separation of combined sewers throughout Michigan.

The figures reflect a variety of capital improvements, including renovation and construction of secondary treatment facilities to provide minimum treatment, and funding of advanced treatment facilities to meet more stringent standards. Also included are renovation and installation of collecting sewers to carry sewage from individual sources; interceptor sewers to receive sewage from collecting sewers and convey sewage to treatment plants; and separation of combined sewers to eliminate overflows and prevent overloading of treatment facilities.

Waste Water Treatment: Investment Priorities

Critical Investment Needs: $1.1 billion

Compliance with federal waste water treatment requirements would be achieved in 38 communities which have existing public health hazards ($360 million). Communities currently under enforcement action would achieve the same level of compliance ($640 million). In addition, combined sewer overflow correction for the Rouge River area where projects have been designed would be achieved ($100 million).

Essential Investment Needs: $2.665 billion

Communities who do not yet have projects designed would meet federal water quality guidelines ($765 million). In addition, waste water treatment systems would be upgraded and expanded to allow for economic development and growth in many Michigan communities, including projects in communities currently under a "sewer ban," which inhibits their growth and expansion.

Optimal Investment Needs: $3.0 billion

Statewide separation of combined sewers would be achieved, preventing water pollution by discharge of waste water during times of heavy rainfall.

MUNICIPAL WATER SYSTEMS

A clean and safe source of drinking water is essential to Michigan's citizens. Failure of a water system poses an immediate and direct threat to the public health and can necessitate the closure of industry, business, schools, and hospitals until repairs are completed. Such failure is an immediate problem, as a recent example demonstrates.

The Monroe Avenue Water Filtration Plant in Grand Rapids is believed to have been the cause of bacterial contamination of the local water supply for brief periods in 1982 and 1983. During the 1983 incident, the filtration plant was removed from service for emergency repairs, and severe water use restrictions were imposed on all customers. A public notice was issued requiring all water customers to boil their water. This presented extreme difficulties for commercial and industrial establishments and greatly increased their costs. Today, portions of the Monroe Avenue facility remain out of service, although additional maintenance and over a half million dollars of emergency repairs have kept the plant operating on standby status. Planning is now underway for replacement, major renovation, or complete abandonment of this facility.

Program Responsibility

Systems to provide drinking water in Michigan are largely municipally owned, except for those small private systems serving mobile home parks, nursing homes, apartments, and subdivisions. Their size ranges from small developments serving 25 people to the Detroit Metropolitan Water System, serving over four million. There are some 1,500 community water systems and over 11,000 noncommunity (nonresidential) water systems in Michigan.

System size has a significant impact on the cost of water service. In general, the smaller the system and population served, the greater the per capita cost to construct and operate a water system. Small systems rarely have professional managers and significant staff. Important functions which could reduce costs and enhance efficiency, such as annual capital budgeting, annual user rate review, useful computer applications, and replacement needs studies are many times overlooked or unaffordable.

Municipal water suppliers rely on user fees for most of their revenue. Large capital expenditures are normally financed by long-term loans backed by millage or water revenues charged to users. Although there have been a few special state and federal programs to provide water system improvements in the past, there are virtually no grant funds or proposed grant programs for water systems today. It is estimated that local sources will generate $1.081 billion for investment in municipal water systems over

the next ten years.

Estimated Ten-Year Investment Needs: $2.49 billion

The very first comprehensive survey of the capital needs of Michigan's municipal water suppliers was conducted in February and March of 1985. Designed and administered by the Public Investment Coordination Task Force with the assistance of the Department of Public Health (which regulates public water suppliers), the survey was sent to 600 of the largest public and private suppliers in the state, serving 96 percent of the state's population. Each supplier was asked to assess its current inventory of facilities and estimate system needs and deficiencies for 1985, and for the next ten years. Responses were received from 230 suppliers serving 62 percent of the state's population.

The data from this survey provided a basis for estimating investment needs for water supply systems statewide. A firm inventory of conditions is difficult to obtain, however, because much of the system depends upon pipelines buried beneath public roads. The Public Investment Coordination Task Force believes that these needs estimates are conservative.

Estimated needs include facilities that function as the source, and provide for storage, treatment, and distribution of water. The most frequently listed need is construction or renovation of pipelines. Special maintenance projects and repair or renovation of tanks and water treatment plants were also mentioned. New construction needs include drilling wells and building water treatment plants. Although this need was less commonly reported, its cost is high--usually over a million dollars for a single small new treatment plant.

Municipal Water Systems: Investment Priorities

Critical Investment Needs: $1.2 billion

Safe, fresh drinking water would be available on demand where municipal water systems are currently in place. Deferred maintenance would be eliminated, preserving our investment in municipal water facilities. Compliance with state and federal laws would be achieved, and existing water contamination problems addressed.

Essential Investment Needs: $1.05 billion

Municipal water systems would be expanded to satisfy all current demand and ensure water availability for fire protection.

Optimal Investment Needs: $ 240 million

Water system service areas in some existing systems would be expanded to meet future demand, allow for population growth and economic development, and provide more efficient facilities and operation.

Education

EDUCATIONAL INFRASTRUCTURE CATEGORIES
(in Millions of Dollars)

Category	Estimated Needs 1985-95	Critical Needs	Essential Needs	Optimal Needs
Colleges & Universities (4-Year)	$ 840	$ 289[1]	$ 399	$ 152
Community Colleges	$ 158	$ 45	$ 41	$ 72
Public Education (K-12)	$2,677	$2,000[2]	$ 612	$ 65
Total Education Needs	$3,675	$2,334	$ 1,052	$ 289

[1]Some potential new construction may also be included as a critical need for four-year colleges, universities and community colleges. The cost of this construction has not yet been determined and would increase the estimated critical needs in these categories.

[2]This total does not include environmental needs such as asbestos removal or encapsulation. Should it be determined that removal of asbestos is the appropriate solution to this environmental hazard, public schools would be faced with estimated capital costs of over $200 million.

HIGHER EDUCATION

In 1984, the Governor's Commission on the Future of Higher Education found that Michigan higher education is a "great system in jeopardy." Per capita state support for four-year colleges and universities had declined dramatically from 1979 to 1983, and funds that normally would have been used to maintain the physical plant were diverted to cover other shortfalls. Deferred maintenance problems have now become so acute that, according to the President's Council of State Colleges and Universities, "If no state action is taken, buildings will be lost." Accreditation is another concern. Until recently, when construction of a new veterinary clinic at MSU was begun, Michigan State University's veterinary program was in danger of losing its accreditation unless its facilities were upgraded.

The situation for community colleges is also becoming serious, as their facilities have now reached an age when significant maintenance is required. At the same time, increases in community college enrollment and changes in educational technology have created a need for new facilities.

Program Responsibility

Four-Year Colleges and Universities:

Growth in the state's four-year colleges and universities was modest until the post-World War II "baby boom" created large enrollment pressure beginning in the early 1960's. As a result, the state faced a flood of requests for expanded facilities by its colleges. In response, the state invested $882 million in college construction in the two decades since 1965.

With the state's financial crisis of the late 1970s and early 1980s, and the increased rate of inflation in construction costs, available state funds to meet the continuing need for replacement and maintenance of buildings were drastically reduced. Thus, both necessary new building and continuing maintenance needs went unmet. In 1983, Governor Blanchard sought to begin to reverse this trend. Since 1983, 34 different construction projects- emphasizing facilities in science, engineering, and medicine- have been authorized. In total, $510 million in bond money was provided to address a significant portion of outstanding needs. Over the next ten years, it is estimated that $669 million in revenues will be available for additional maintenance and new construction.

Community Colleges:

Prior to 1979, community colleges could acquire debt and assess millage to bond that debt without approval of the electorate. In 1978 voters approved an amendment to the Constitution which

requires voter approval for debt millage. This restriction on local funding- the largest source of funding for community colleges- coupled with the state's financial difficulties from 1979 to 1983, resulted in a major contraction of capital investment in community colleges. Though community colleges also receive some federal and private funds on a project-by-project basis, the largest share of funding will continue to be local millage. Anticipated revenue is expected to amount to $85 million over the next decade.

Estimated Ten-Year Investment Needs: $998 million

Four-Year Colleges & Universities: $840 million

Testimony in public hearings conducted by the Governor's Commission on the Future of Higher Education was used as a starting point for the 1985 survey of college and university needs conducted by the Public Investment Coordination Task Force. All of Michigan's 15 publicly-owned colleges and universities responded to the survey. College and university officials were asked to reassess their institutions' priority projects, and estimate their annual maintenance needs for the next ten years. Estimates of deferred maintenance costs, not included as part of the follow-up survey, were obtained from testimony to the Governor's Commission by representatives of the Michigan Society of Professional Engineers (MSPE). An MSPE task force inspected five universities to determine deferred maintenance needs and extrapolated their findings to the remainder of state colleges and universities. The resulting estimated cost of eliminating deferred maintenance problems is $90 million.

The largest portion of needed improvements for four-year colleges and universities is the addition of new laboratory and classroom space. Maintenance needs are also considerable, and include such improvements as roof repair, electrical and lighting repair, improvement of handicapper access, and increased energy efficiency measures. Renovation needs include remodeling of classrooms and libraries.

Community Colleges: $158 million

Needs estimates for community colleges are based on a 1985 survey conducted by the Public Investment Coordination Task Force, with the assistance of the Michigan Community Colleges Association and the Michigan Department of Management and Budget. All 29 community colleges responded to this survey, the first of its kind. Community college officials estimated their current renovation, new construction, and maintenance needs and projected those needs for the next ten years.

Unlike four-year colleges and universities, many community colleges were built in the last 20 years, and thus have limited

maintenance needs. New buildings and expansion of existing buildings represent the greatest portion of community college needs, while maintenance is largely limited to improvement of roads and parking lots, and heating and other plant repairs.

Higher Education: Investment Priorities

Critical Investment Needs:	$334 million
Four-Year Colleges & Universities:	$289 million
Community Colleges:	$ 45 million

Deferred maintenance at Michigan's colleges, universities, and community colleges would be eliminated. Renovation which responds to public health or safety needs would be undertaken. A small number of vital new buildings would be constructed, providing the latest in high technology instruction.

Essential Investment Needs:	$440 million
Four-Year Colleges & Universities:	$399 million
Community Colleges	$ 41 million

Existing facilities would be renovated and new facilities constructed to accommodate high-technology instructional equipment. New construction would emphasize meeting Michigan's economic goals through advanced education and would be accessible to a wide variety of students across the state.

Optimal Investment Needs:	$224 million
Four-Year Colleges & Universities:	$152 million
Community Colleges:	$ 72 million

New construction needs in several areas of study- from high technology engineering to the creative and performing arts- would be met. Facilities would be met through new construction on several campuses across Michigan.

PUBLIC EDUCATION (K-12)

Over the past several years, Michigan's educational facilities have deteriorated due to a lack of necessary funds for repair. Many facilities are now in need of major repairs, renovation, or upgrading to maintain structural integrity and allow effective use. In addition, shifts in population have created a need for new school buildings in some districts. Other school buildings are no longer functional because of new technology related educational programs that require more modern facilities.

A particular problem is removal of asbestos insulation. The health risks for school children and teachers exposed to asbestos are very serious, and the cost of removing this substance from schools across Michigan is expected to be considerable. The full extent of the problem is not yet known, as more asbestos insulation is discovered in schools each year. In 1985, as example, one school district surveyed its school buildings and discovered large amounts of asbestos insulation, when previously it had been thought there was none. School officials estimate the cost of removing it to be $3.4 million, only partially defrayed by federal funds. Similar needs will certainly be discovered in other school districts, which have not yet been surveyed.

Program Responsibility

K-12 public schools receive approximately $2.4 billion in state funds each year; $1.5 billion from sales and other miscellaneous tax revenue, $400 million from the lottery, and $500 million from the state General Fund. Ninety-five percent of this revenue pays for instructional activities. Capital improvements are largely funded through local taxes and bond issues, and subject to local approval. Political opposition to increased funding has intensified in recent years, as the number of households with school aged children has declined. As a result, projected revenues for maintenance, renovation, and new construction are severely limited. An estimated $640 million will be available over the next ten years.

Estimated Ten-Year Investment Needs: $2.612 billion

The needs estimates for Michigan's more than 3,000 public school buildings were developed through a general survey conducted in November 1985 by the association of Michigan School Business Officials (MSBO) and Michigan Association of School Administrators (MASA), with the assistance of the Public Investment Coordination Task Force.

School superintendents, business officials, and physical plant managers were asked to supply information about the number of buildings and the square footage of each building in their school district. They were also asked to assess the age and condition

of roofs, floors, plumbing and electrical systems, heating and cooling systems, and other physical components of their school buildings. In addition, they sought to estimate their new construction needs for the next ten years. Using this information, MSBO and MASA were able to estimate replacement, repair, and renovation costs on an aggregate basis, using average statewide cost estimates.

A more detailed survey of K-12 public schools is expected to be completed later this year, and will supplement these findings.

Public Education (K-12): Investment Priorities

Critical Investment Needs: $2 billion

Deferring maintenance of Michigan's K-12 school system would be eliminated, ensuring a safe instructional environment for Michigan children. Roofs, windows, alarm systems, electrical and plumbing systems, and flooring would be maintained on a current basis and code compliance would be achieved.

Note: Asbestos removal or encapsulation was also ranked as a critical need. The best method of correcting the asbestos problem must be determined on a site basis, but current estimates place the total cost of asbestos removal at $202 million. This figure would be in addition to the totals listed here.

Essential Investment Needs: $612 million

Schools would be renovated and upgraded to improve energy efficiency. Existing facilities would be remodeled to provide day-care (for student parents), pre-school, computer, and community education facilities. Investment would be made to improve bus transportation and eliminate deferred maintenance of communications systems. In addition, construction of voc-tech and math and science centers and new classroom buildings in districts where a need for additional space has been demonstrated would be possible.

Optimal Investment Needs: $65 million

Physical education facilities would be maintained on a current basis. In addition, new facilities would be constructed in many K-12 school districts, providing Michigan children with significant athletic opportunities.

Transportation

TRANSPORTATION INFRASTRUCTURE CATEGORIES
(in Millions of Dollars)

Category	Estimated Needs 1985-95	Critical Needs	Essential Needs	Optimal Needs
Passenger & Freight Transportation	$ 2,733	$ 350	$ 859	$1,524
Highways, Roads & Streets	$13,600	$5,200	$4,900	$3,500
Total Transportation Needs	$16,333	$5,550	$5,759	$5,024

PASSENGERS & FREIGHT TRANSPORTATION

Traditionally, the federal government has provided a substantial part of the funding for passenger and freight transportation services. Further reduction or abandonment of a wide variety of federal funding programs threatens the continuation of these services. Trains, buses, and airplanes would operate less frequently, and the efficiency and scope of passenger and freight systems would be reduced. The impact of transportation cutbacks would be felt throughout Michigan's economy.

Deterioration of passenger and freight facilities and equipment affects both safety and service. More than a dozen general aviation airports in Michigan experience use restrictions or face closure due to deteriorating runway surfaces. One airport is closed up to six weeks each year due to poor drainage; another was closed for a month because of runway lighting failure. In the Detroit area, a shortage of operational local buses, caused by inadequate maintenance and vehicle age, limits service. The State of Michigan owns more than 800 miles of rail line which were in a deteriorated condition when acquired, and still require much rehabilitation. Shipment of hazardous cargoes over these tracks mandate priority attention to this problem. While no serious damage has been caused by derailments, the potential for such problems is real.

Program Responsibility

Funding for transportation is largely generated through user fees. Airport maintenance and construction are funded by the federal passenger ticket tax, federal and state aviation fuel taxes, and fees administered by state and local governments. Other passenger and freight transportation systems are funded by portions of the federal gas tax, the state sales tax on motor vehicle related items, state fuel tax, weight taxes, and vehicle registration fees. Total revenues of $503 million are anticipated over the next ten years though a significant portion of these funds is limited by federal restrictions and may not be available to address critical needs.

- **Air passenger and freight** services in Michigan are operated by private companies, using approximately 270 general aviation airports in the state. Of these, 125 are publicly owned; construction and maintenance, as well as navigational aids are government funded. Twenty-three of the publicly owned aiports offer scheduled commercial airline service, which served 18 million passengers in 1985.

- **Marine passenger and freight** services are generally operated by private enterprise, although five of Michigan's 20 marine passenger services are publicly operated. There are more than 90 active commercial ports in Michigan, some 50 of which

which regularly process cargo.

- **Intercity rail passenger** service is operated by a quasi-public entity, Amtrak, which serves 20 communities in the southern third of Michigan. Many terminals are publicly owned, while most trackage is privately owned and leased for use by Amtrak.

  The state owns 827 miles of railroad, representing 18 percent of the 4,700 route miles in Michigan. State involvement began in 1976 to preserve **rail freight** service to regions which were to be abandoned by private companies.

- **Intercity bus** transportation is operated by private sector firms. In 1985 16 companies offered regularly scheduled service to over 240 communities, carrying just under one million passengers. Some intercity bus terminals are publicly owned, particularly those that serve both bus and rail services.

- Terminals used by **local public transportation** services are publicly owned, and the services themselves are in most cases publicly operated. In a few instances the service is privately operated using public funds.

  The local bus program provides essential local transit services throughout the state, serving more than 100 million passengers annually. In addition, many individuals with limited access to transportation, such as senior citizens and handicappers, rely on the small bus Specialized Services Program as a primary means of transportation.

Estimated Ten-Year Investment Needs: $2.733 billion

Needs estimates for passenger and freight transportation are taken from Michigan's Transportation Needs, 1983-1994, one of a series of legislatively mandated needs studies conducted every four years. Figures are adjusted to describe capital investment in the period 1985-95.

- **Air transportation** needs include replacement and rehabilitation of runways, taxiways and aprons, lights, navigational aids, and terminals.

- **Marine passenger** capital needs include new vessels, replacing and refurbishing existing vessels, and facilities for publicly owned systems. **Marine freight** needs include construction and enlargement of navigation channels, as well as new or modified terminals.

- **Intercity rail** improvements include replacing and refurbishing existing facilities and vehicles. **Rail freight** capital needs

include bridge reconstruction, new rail construction, rehabilitation, and rail acquisition. In the past, the state has purchased railroad locomotives and rolling stock for lease by state-assisted short line operators. A limited number of similar projects are also included.

- Major capital improvements required for **intercity bus** systems include the purchase of new vehicles, rehabilitation of existing vehicles, and construction or renovation of public terminals.

- **Local Public Transit** projects include existing and proposed systems, such as traditional bus services, the downtown Detroit people mover, Woodward light rail system, and Ann Arbor-Detroit commuter service, as well as dial-a-ride systems and elderly and handicapper services. Improvements include rehabilitation and replacement of vehicles- large and small buses, rail passenger cars, and light rail vehicles- construction of facilities- terminals, garages, offices, shelters, and loading facilities- and acquisition of right-of-way.

Passenger & Freight Transportation: Investment Priorities

Critical Investment Needs: $350 million

Deferred maintenance needs would be met to ensure existing service levels for all forms of passenger and freight transportation including air, rail, marine, local and intercity bus passenger service, and marine and rail freight transportation.

Essential Investment Needs: $859 million

Investment would be made to replace vehicles, facilities, and tracks as necessary to preserve current passenger and freight service levels over the next ten years. In addition, some services would be improved to increase frequency and speed, while maintaining safety.

Optimal Investment Needs: $1.524 billion

Innovative passenger and freight transportation systems would be established to provide maximum mobility for people and goods throughout Michigan. Approximately $1 billion in this category is attributable to the Woodward light rail system.

HIGHWAYS, ROADS & STREETS

Michigan can boast of an excellent toll-free interstate highway system that spans the entire state. We can claim as well an extensive network of local highways, roads, and streets. It is an impressive construction achievement and investment in our infrastructure.

There are 117,000 miles of roadway in Michigan, all of which require routine maintenance, periodic resurfacing, and eventual reconstruction to preserve their use. Because reduced consumption of gasoline reduced transportation revenue in the late 1970s, Michigan soon fell behind schedule in road repair and improvement. To resolve this problem, the state legislature, in 1982, enacted the Transportation Survival Package, authorizing an increase in the state gas tax. Governor Blanchard directed that these additional funds, augmented by funds from a federal gas tax increase, be used to preserve our existing road network rather than to undertake extensive new construction projects. As a result, the increasing deterioration of Michigan's roads was stopped, and for the past three years, the backlog of work has been reduced. The need for repairs and improvements has not been eliminated, however, and further deterioration can have serious economic and safety implications.

Michigan's bridges serve as an appropriate example. Of the more than 10,000 bridges in the state, 25 percent presently show structural deterioration, requiring that a load limit be posted. There have been some accidents, and even a rare bridge collapse.

Program Responsibility

In transportation planning, roads are separated into functional classes according to their use. Local roads and streets provide access to property for area residents. Connecting these local roads to work, shopping centers, and highway entrance ramps is a system of roads known as "collectors." High speed, highly traveled highways are "arterials." They carry 76 percent of the vehicles miles of travel in Michigan, though they comprise only 18 percent of our road system. Responsibility for all local roads, the majority of collectors, and some arterials falls to cities and counties. The remaining 9,494 miles of high volume arterials and collectors, which carry roughly half the traffic statewide, are the responsibility of the Michigan Department of Transportation.

Funding for transportation improvements is derived from a variety of sources; the primary source of revenue is the Michigan Transportation Fund. This fund is generated through fuel taxes, weight taxes, and vehicle registration fees, distributed according to a legislatively-mandated formula. State funds and local property taxes used for road repairs are also used to match

federal funds, generated by federal transportation taxes. Total revenues of approximately $3.5 billion are anticipated over the next ten years.

Estimated Ten Year Investment Needs: $13.6 billion

In 1983, the Department of Transportation completed an inventory of Michigan's highways, roads, and streets for the Governor's Needs Study Committee. An updated condition report for each mile of roadway was used to determine potential roadway deficiencies, necessary improvements, and the costs of such improvements. The results were summarized in Michigan's Transportation Needs, 1983-1994. The data was updated in 1985 for the first phase of the Michigan Infrastructure Needs Assessment, 1985-95.

Improvements identified for highways, roads, and streets were broken down into categories to determine costs. Included are preservation actions, such as reconstruction or resurfacing; improvements, such as roadway widenings to relieve congestion on existing roads; and expansion and new construction. In addition, estimated needs include preservation, improvement, or expansion of bridges and railroad crossings. Capital investment for bicycle and horse paths, as required by law, is also included.

Michigan's highways, roads, and streets will continue to receive regular routine maintenance needed to preserve their use before any capital improvements are made. The cost of routine maintenance is not considered a capital need, and such costs are not included in totals listed here. Funding for capital improvements is limited because maintenance and other "committed costs" including debt service and tort liability must first be addressed.

Highways, Roads, & Streets: Investment Priorities

Critical Investment Needs: $5.2 billion

Investment to meet all our current preservation needs on the most traveled highways- arterials and high volume collectors- would be possible. Some arterials would be improved through widening and expanded by new construction. Key collectors would be improved or expanded to alleviate existing congestion and ensure safety.

Essential Investment Needs: $4.9 billion

Arterials, collectors, and the majority of local roads would be preserved as necessary, providing easy access for local residents. Frequently-traveled collectors would be improved or expanded to provide safer and more efficient travel conditions.

Optimal Investment Needs: $3.5 billion

The lowest volume local roads and streets would be preserved, improved, or expanded as necessary to provide the greatest convenience and safety for all local travelers. Eight thousand miles of gravel roads would be paved as part of this optimal investment.

Government

GOVERNMENT INFRASTRUCTURE
(in Millions of Dollars)

Category	Estimated Needs 1985-95	Critical Needs	Essential Needs	Optimal Needs
State Facilities	$1,324	$ 336	$ 759	$ 229
Total Governmental Needs	$1,324	$ 336	$ 759	$ 229

STATE FACILITIES

As Michigan's recent economic difficulty restricted state government revenue, capital expenditures were postponed and maintenance deferred to make funds available for the day-to-day operations of government. While the state budget crisis is behind us, the problems created by deferred maintenance and the overcrowding of state buildings continue to escalate. Further delay will increase the ultimate cost of repairs and new construction.

The situation in the Department of Corrections is particularly acute. Currently, the department lacks 1,100 beds needed for prisoners, despite the addition of 3,000 new beds in 1985. Because of this shortage, some state prisoners are housed in county jails, not designed for long-term incarceration. Judges are faced with a lack of prison space when considering sentencing of convicted felons.

The Department of Corrections estimates that another 6,500 beds will be needed by 1990. Even with current accelerated construction schedules, Michigan will find itself some 2,000 beds short of projected needs in 1989.

Program Responsibility

State facilities include publicly-owned buildings in the departments of Agriculture, Corrections, Education, Labor, Management and Budget, Mental Health, Military Affairs, Natural Resources, Public Health, Social Services, State Police, and Transportation--most of state government. They are funded on a year-to-year basis with limited revenues from the state's General Fund, augmented by occasional bonding by the State Building Authority. In addition, the departments of Military Affairs, Transportation, Social Services, and Mental Health receive federal revenues and specifically earmarked state funds. Total revenues over the next ten years are anticipated to be $744 million.

Estimated Ten-Year Investment Needs: $1,324 million

A state facilities survey was designed and administered by the Public Investment Coordination Task Force. The State Facilities Needs Task Force was formed, including one representative from each of the 12 departments owning and maintaining public property. Representatives from the State Facilities Task Force were responsible for determining needs within each department. They completed their survey in March of 1985.

As a result of annual budgeting, long range planning has been difficult and most departments have a large backlog of deferred needs.

A large portion of the total needs reported are in the Department of Corrections. They reflect the criminal justice crisis Michigan shares with much of the nation. Additional improvements include new construction of testing laboratories, armories, state police posts, and transportation maintenance garages; maintenance of mental health facilities, military bases, state police, and handicapper facilities; and replacement of roofing, water mains, fire alarm systems, lighting fixtures, and buildings. Not included in the total calculation is the potential cost of removing asbestos from public buildings. In addition, there are two categories of needs for which estimates are not currently available: potential replacement costs for the state's oldest psychiatric hospital, and future needs estimates for recreational waterways.

State Facilities: Investment Priorities

Critical Investment Needs: $336 million

Maintenance would no longer be deferred at publicly owned state facilities ($272 million). Two new prisons, in addition to those already approved by the legislature, would be constructed to meet critical space needs. ($64 million).

Essential Investment Needs: $759 million

Public buildings would be renovated and upgraded to enhance efficiency. Additional laboratories would be built to monitor the quality of Michigan's natural resources. Some ten new prisons would be constructed to provide additional space to house inmates.

Optimal Investment Needs: $229 million

Future demand for government services would be met through additional construction of public facilities.

Acknowledgements

MICHIGAN INFRASTRUCTURE COALITION

Chairperson	Thomas R. Ricketts Standard Federal Savings & Loan Association
Vice-Chairs	John Thodis Michigan Manufacturers Association
	Jim Barrett Michigan State Chamber of Commerce
	Ken Case Michigan State Building & Construction Trades Council
	Glenn Stevens President's Council of State Colleges & Universities
Secretary/ Treasurer	Lawrence Martin Michigan Road Buildings Association

Ms. Ellen Keller Hayes
Alliance for the Mentally Ill of Michigan

Mr. John O'Malia
American Water Works Association

Mr. John Maas
Associated General Contractors of America

Mr. Joseph Neussendorfer
Associated General Contractors of America

Mr. Gilbert A. Rice
Associated Underground Contractors, Inc.

Mr. Leon Jackson
Association of Minority Contractors

Mr. Wallace Williams
Booker T. Washington Business Association

Mr. Steve Wagner
Consulting Engineering Council of Michigan

Mr. Earl F. Rogers
County Road Association of Michigan

Mr. Raymond Glowski
Detroit Building & Construction Trades

Mr. Douglas Matheison
Engineering Society of Detroit

Mr. Clement Lett
Great Quality Printing

Mr. Herb Swan
Michigan Aeronautics Commission

Mr. John P. Woodford
Michigan Asphalt Paving Association

Mr. Mike Brown
Michigan Association of Counties

Mr. George Moyer
Michigan Association of Home Builders

Mr. Don Elliot
Michigan Association of School Administrators

Ms. Kathleen Straus
Michigan Association of School Boards

Mr. Donald Booth
Michigan Bankers Association

Mr. Richard G. Ballard
Michigan Community Action Agency Association

Mr. Tom Bernthal
Michigan Community College Association

Mr. Gerald J. McCarthy
Michigan Concrete Paving Association

Mr. Claude (Buzz) Horton
Michigan Construction Equipment Dealers

Mr. Charles Keeling
Michigan Education Association

Mr. Thomas Anderson
Michigan Energy & Resource Research Association

Mr. Robert E. Smith
Michigan Farm Bureau

Mr. Hugh E. Jarvis
Michigan Federation of Teachers

Mr. Steve Scheer
Michigan Hospital Association

Mr. Gene Biondi
Michigan Industrial Developers Assocation

Ms. Nancy White
League of Women Voters of Michigan

Mr. Douglas Graham
Michigan Mineral Resources Association

Mr. William G. Davis
Michigan Municipal League

Mr. Ernest Browne, Jr.
Michigan Parent-Teacher Association

Mr. Lynn Briggs
Michigan Plumbing & Mechanical Contractors Association, Inc.

Mr. James F. Dunn
Michigan Public Transit Association

Mr. Thomas Drake
Michigan Railroads Association

Mr. Larry Andrick
Michigan Retailers Association

Mr. Donald Wall
Michigan Savings & Loan League

Dr. Wallace Piper
Michigan School Business Officials

Ms. Rae Dumke
Michigan Society of Architects

Mr. Philip Hathaway
Michigan Society of Planning Officials

Mr. Harry Ball
Michigan Society of Professional Engineers

Mr. Harold Bondy
Michigan Teamsters

Mr. John LaRose
Michigan Townships Association

Mr. William Marshall
Michigan Transportation
Commission

Mr. Paul Nine
Michigan Travel Commission

Mr. Milton McQuady
Michigan Trucking Association

Mr. Michael Crawford
National Electrical Contractors
Association

Mr. Dave Barthmuss
Publicom, Inc.

Mr. Frank Garrison
Michigan United Auto Workers
Community Action Program

Mr. John A. Doherty
Underground Contractors and
Suppliers Association

Mr. David Brickey
United Transportation Union

The Michigan Infrastructure Coalition extends its thanks to the Public Investment Coordination Task Force for their involvement in Governor Blanchard's Program to Rebuild Michigan.

PUBLIC INVESTMENT COORDINATION TASK FORCE

Robert L. Mitchell
Coordinator of Public Investment

DEPARTMENT OF AGRICULTURE
- Randy Harmson
- Gene Ruff

DEPARTMENT OF COMMERCE
- William Lontz
- Tom Martin

ENERGY ADMINISTRATION
- Bob Cappelletti

MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY
- Regina Solomon

DEPARTMENT OF CORRECTIONS
- Robert Groenleer
- Alvin Whitfield

DEPARTMENT OF EDUCATION
- Richard Kelley

DEPARTMENT OF LABOR
- Richard Baker
- William Castanier

DEPARTMENT OF MANAGEMENT & BUDGET
- David Claus
- Lynne Schaefer

OFFICE OF SERVICES TO THE AGING
- Flora Boles
- Jean Friend

DEPARTMENT OF MENTAL HEALTH
- Vaughn Rawson

DEPARTMENT OF MILITARY AFFAIRS
- Michael J. Rice

DEPARTMENT OF NATURAL RESOURCES
- Thomas Kamppinen
- William Turney

DEPARTMENT OF PUBLIC HEALTH
- James Cleland

DEPARTMENT OF TRANSPORTATION
- G. Robert Adams
- Carol Norris
- Jacqueline Shinn

DEPARTMENT OF TREASURY
- Jay Rising

EXECUTIVE OFFICE
- David Dempsey
- Lee Gonzales

SENATE FISCAL AGENCY
- Arnold Rich

HOUSE FISCAL AGENCY
- James Heckman

ADDITIONAL TASK FORCE MEMBERS
- Richard Esch
- Angel Fandalian
- Terry Gotts
- Polly Hostetler
- Jack Morgan
- Margaret Stosik
- Sam Wallace

In addition, our thanks go to the following individuals for their special efforts to document and describe Michigan's infrastructure needs for this analysis.

Alan Feuer
Janet Guinter
Polly Hostetler
Jack Morgan
Margaret Stosik
Sam Wallace

ENVIRONMENTAL
- Jim Cleland
- Fred Clinton
- Andrew Hogarth
- Thomas Kamppinen
- William Marks
- Raymond J. Smit

EDUCATION
- Richard Calkins
- Dennis Carpenter
- Richard Kelley
- Douglas Roberts
- Dr. Jack Ryder
- Lynne Schaefer
- James Sneathen

GOVERNMENT
- James Heckman
- Robert Groenleer
- Lynne Schaefer

TRANSPORTATION
- G. Robert Adams
- Edgerton W. Bailey
- Larry Britton
- Patricia Eodchick
- Angel Fandalian
- Robert Gehman
- Terry Gotts
- Gwen Hulbert
- Robert Kuehne
- Louis Lambert
- Russell Laverty
- Carol Norris
- James Roach